REMARKS

Claims 1-20 were examined and rejected. Applicant thanks the Examiner for a detailed and thoughtful examination of all the claims.

Claims 1-20 remain without any amendments in this application for further examination.

Claim Rejections – 35 U.S.C. §102(b)

Claims 1-8, 11-13, and 16-18 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kudo et al (US 6,353,435) hereinafter Kudo '435. This rejection is respectfully traversed.

As to the independent claim 1, Kudo '435 fails to disclose or suggest at least the following limitations originally claimed by Applicant:

> *"a waveform pattern memory for providing the display device with plural sets of waveform pattern signals, each set having an identical number of waveform pattern signals, each waveform pattern signal having a predetermined number of bits and producing a different gradation level when applied to a pixel, each bit being provided for displaying during a corresponding frame of the plurality of consecutive frames; and*
>
> *a waveform pattern selector for outputting a waveform pattern selecting signal in response to the column and row numbers of the desired pixel such that the waveform pattern memory provides two adjacent pixel groups with two different sets of the plural sets of waveform pattern signals, respectively, wherein:*
>
> *the waveform pattern memory determines a selected set of the plural sets of waveform pattern signals in response to the waveform pattern selecting signal, determines a selected waveform pattern signal of the selected set of waveform pattern signals in response to the gradation data, and provides the bits of the selected waveform pattern signal, one bit per frame, over the*

plurality of consecutive frames."

Although the Examiner comments that Applicant's claimed waveform pattern memory is anticipated by Kudo '435: "a gray-scale No. 1 through No. 64 pattern generator are within the FRC pattern generator 107 in figure 4, col. 9, lines 31-63," this rejection is respectfully traversed. First of all, the 64 types of FRC patterns in Kudo '435 are formed into such matrix-like patterns as shown in FIG. 6, for example (see col. 10, lines 52-63). A plurality of matrix-like FRC patterns are applied, each pattern per frame, to generate a uniform gray-scale over an array of pixels during an FRC period (see col. 10, lines 52-63). For a better illustration of the gray-scale processing of the FRC system, a 4-frame FRC period is described with reference to FIG. 30 (see col. 1, lines 52-58).

It should be noted that the waveform pattern signal claimed by Applicant has a characteristic of "*each waveform pattern signal producing a different gradation level when applied to a pixel*". Special attention should be paid to that a **single** waveform pattern is applied to a **single** pixel, at which a **single** gradation level is generated. In other words, the waveform pattern refers to a **time-domain** (or frame-domain) pattern, as shown in Applicant's filed FIGs. 4(a) and 4(b), and is therefore claimed as "*each waveform pattern signal having* ***a predetermined number of bits***, ... , ***each bit being provided for displaying during a corresponding frame*** *of the plurality of consecutive frames.*" Each waveform pattern signal is applied only to a pixel but distributed through a plurality of consecutive frames. However, the matrix-like FRC pattern disclosed in Kudo '435 otherwise refers to a **space-domain** pattern, which is displayed **over an array of pixels with some pixels being ON and some OFF at the same, single frame**. Different matrix-like FRC patterns are displayed at different frames. None of the matrix-like FRC patterns is distributed for displaying through a plurality of consecutive frames. Therefore, the waveform pattern signal claimed by Applicant is not anticipated by the matrix-like FRC pattern disclosed in Kudo '435.

Although the Examiner comments that Applicant's claimed waveform pattern

selector is anticipated by Kudo '435: "a write data selector 106 for selecting FRC decoders 101-104, fig. 3, col. 9, lines 20-30," this rejection is respectfully traversed. It should be noted that Applicant's claimed waveform pattern selector causes the waveform pattern memory to provide two adjacent pixel groups with **two different sets** of the plural sets of waveform pattern signals, respectively. However, Kudo '435 otherwise teaches selecting only one FRC decoder at one frame to provide a single matrix-like FRC pattern for the entire display screen, and therefore fails to suggest two different sets for two adjacent pixel groups.

As explained earlier, Applicant's claimed waveform patterns are by nature different from the matrix-like FRC patterns of Kudo '435, due to which the waveform pattern memory is by no means anticipated by the gray-scale No. 1 through No. 64 pattern generators cited by the Examiner. Especially pointed out for explaining the significant difference is a limitation claimed by Applicant that the waveform pattern memory provides "*the bits of the selected waveform pattern signal, **one bit per frame**, over the plurality of consecutive frames*." However, it is **one matrix-like FRC pattern per frame**, over the entire display screen, that each of the gray-scale No. 1 through No. 64 pattern generators in Kudo '435 is disclosed to provide.

Because none of Kudo '435 and the prior art made of record in the Non-Final Office Action discloses or suggests such limitations argued above, the independent claim 1 is thus believed to be allowable over the art of record, and all claims dependent therefrom, which are claims 2-18, are likewise believed to be allowable at least for this reason.

Claim Rejections – 35 U.S.C. §103(a)

Claims 9 and 10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kudo '435 in view of Saxena et al (US 5,777,590). This rejection is respectfully traversed.

Because none of Kudo '435 and Saxena '590 discloses or suggests such limitations argued above, the independent claim 1 is thus believed to be allowable over the art of

record, and all claims dependent therefrom, which are claims 2-18, are likewise believed to be allowable at least for this reason.

Claims 14 and 15 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kudo '435 in view of Lin (US 6,791,576). This rejection is respectfully traversed.

Because none of Kudo '435 and Lin '576 discloses or suggests such limitations argued above, the independent claim 1 is thus believed to be allowable over the art of record, and all claims dependent therefrom, which are claims 2-18, are likewise believed to be allowable at least for this reason.

Claim Rejections – 35 U.S.C. §102(b)

Claims 19 and 20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Kudo et al (US 6,084,561) hereinafter Kudo '561. This rejection is respectfully traversed.

It should be noted that figure 9 of Kudo '561, which is cited by the Examiner, actually teaches a high frequency FRC pattern made up of low frequency selection FRC signals, which is employed to be first superposed with any of the matrix-like low frequency FRC patterns (e.g. patterns No. 1 through No. 32 in Figure 10) and then supplied as a combined pattern to the liquid crystal output I/F unit for generating a requested gray scale. Such combining method is well-illustrated in and can be clearly appreciated with reference to Figures 10, 16, and 17 of Kudo '561. In other words, the high frequency FRC pattern made up of low frequency selection FRC signals does not intend to, and is also impossible to generate any gray scale on a display screen **by itself alone**.

As to the independent claim 19, however, each waveform pattern signal is claimed as "*having a predetermined number of bits and* ***producing a different gradation level when applied to a pixel****, each bit being provided for displaying during a corresponding frame of the plurality of consecutive frames.*" Therefore, Applicant's claimed waveform

pattern signal is not anticipated by the high frequency FRC pattern of Kudo '561.

Because none of Kudo '561 and the prior art made of record in the Non-Final Office Action discloses or suggests such limitations argued above, the independent claim 19 is thus believed to be allowable over the art of record, and the dependent claim 20 is likewise believed to be allowable at least for this reason.

Summary

In summary, Claims 1-20 remain in this application for further examination. Through the remarks presented above, all of the remaining claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited.

Sincerely yours,

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Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 13 hours behind the Taiwan time, i.e. 9 AM in D.C. = 10 PM in Taiwan.)